

Reconsideration of the above-identified application is respectfully requested in view of the following remarks.

REMARKS

The Examiner has made the election of species requirement final. Applicants confirm their election of the catalyst species and again reiterate that all the claims present in this application read on the elected species.

Claim 1 has been amended to more clearly define the invention. In particular, the invention is directed to a method of producing a library of composites or compositions by a method that comprises depositing one or more components on a substrate sheet in the form of a continuous concentration gradient, in which each component is deposited in the shape of an equilateral triangle. Once one or more components have been deposited on the substrate sheet, the samples are then formed by removing a portion of the triangle for testing. Inasmuch as the concentration gradients are known for each of the components deposited, the concentration of each component in a sample chosen anywhere within the triangle can be readily determined. It is believed that support for the amendment is provided throughout the application including the Summary of the Invention and Figures 1 and 3 which illustrate the forming of the samples within the triangle. Claim 1 has also been amended to state that the samples are formed by removing portions of the triangle. Accordingly, claims 2 and 3 have been cancelled.

Claims 1-42 have been rejected under 35 U.S.C. 103 (a) as being unpatentable over Weinberg et al., U.S. 5,959,297. The rejection is respectfully traversed.

Weinberg is directed to a method of forming and screening a diverse array of materials as noted by the Examiner. The primary difference between the method of forming a combinatorial library as in the applied reference and the method as set forth in the claimed invention is that Weinberg et al. forms their samples during the depositing stage of the process whereas in the presently claimed invention, the samples are formed by removing a portion of a triangle on which the various components have been deposited. Referring to Weinberg, column 8, lines 58-60 it is stated that “an array of materials is prepared by successfully delivering components of the materials to predefined regions on a substrate” (underlining added). Further, at column 9, lines 40-42 it is stated that the “resulting array of materials, each at a discrete and known location on the substrate” is formed as layers, blends, mixtures, etc. Even at Example 1, starting at the bottom of column 24 and continuing to column 25, the components are described as being formed in an array defined by a triangle, and as stated at column 25, line 3, the solutions “were dispensed into a 96-well microtiter plate”. Thus, in the process of Weinberg, the array is formed by depositing the desired components on individual places of the substrate. This placement is achieved by relatively sophisticated equipment as stated at column 11, including sputtering electron beam and thermal evaporation, laser deposition, etc. Even in solution deposition methods, “discrete liquid dispensing techniques” including pipettes, syringes, inkjets, and micro-contact printing are utilized.

In the presently claimed method, the components are provided in the form of a triangle without the need for exact placement of each drop of component within the triangle. In accordance with the present invention, at least one component, and preferably a plurality of components, are applied as concentration gradients across a triangle, but this can be achieved by a simple method such as screen printing in which the material is essentially applied by a single applicator such as a screen printing screen and a squeegee. Since the concentration gradient is known from an apex of the triangle to the opposite base, the concentration of a particular sample can be readily determined from anywhere in the triangle area. Once the coating or coatings are deposited, various samples of any shape or size within the triangle can be taken and the concentration of each component readily calculated from the sample location in the triangle. Thus, the exact composition of the sample is not obtained during the deposition of the components, but from the size and shape of the sample taken from within the triangle after deposition. In this manner, many different samples can be formed without the need for expressly depositing specific minute samples of the components in strictly defined areas of the substrate. Accordingly, it is believed that claim 1 patentably distinguishes over Weinberg et al. and as such, all claims dependent thereon would likewise be patentable.

The Examiner dismisses an important limitation that was originally in claim 3 but now is included in claim 1. Thus, the samples are removed from the substrate sheet in which they are applied. Weinberg does not disclose such a process and the Examiner simply dismisses the limitation as being “within the purview of an ordinary skilled

artisan”. On the contrary, as set forth in Weinberg, the compositions are applied in microtiter wells and accordingly the samples formed by Weinberg which are formed in the wells and tested in the wells are not to be removed from the substrate. Importantly, instant claim 4 clearly states that the samples are removed from the substrate sheet along with the underlying substrate. Again, Weinberg does not suggest such a method. This method is particularly useful in forming a library of catalysts, the elected species as well as pigments and adsorbents. Often, the underlying substrate plays an important role in the activity of the deposited active components in a catalyst, can well affect the color properties of deposited components in a pigment, and as well affect porosity and stability of adsorbents. Accordingly, the limitation of removing the sample from the substrate and then removing not only the sample but the underlying substrate is an important limitation which is not remotely disclosed and cannot be achieved by the method disclosed in Weinberg.

With respect to claim 10, in which the components are deposited by a screen printing process, the Examiner refers to Weinberg, the Abstract and column 11, lines 4-15. The term “screening” in the Abstract of Weinberg is not directed to the screen printing of the components on the substrate sheet but is a synonym for “testing”. Further, there is no indication that the term “micro-contact printing” is a screen printing process. Again, Weinberg utilizes sophisticated equipment to form and deposit components on specific regions of the substrate. In the claimed process, the components can be deposited by a simple screen printing process in which a screen is developed to form a concentration gradient of the component being deposited across the triangle. The

application of a simple concentration gradient by a screen printing process is markedly easier as opposed to the process described in Example 1 of Weinberg in which the components are dispensed into a 96-well microtiter plate creating a specific 11 x 11 x 11 matrix. In the present invention, there is no fixed number of deposited samples as any number of samples can be formed by removing a shaped portion of the deposited components from within the triangle. The present invention presents a much simplified method of forming an even wider array of components than disclosed in Weinberg. The simplicity of the present invention and the ability to form a wide array of components by forming the samples after deposition are distinguishing features and are not set forth, described or suggested in the complicated method of Weinberg, et al.

In view of the above remarks, it is believed that claims 1 and 4-42 patentably distinguish over the art of record and Applicants respectfully solicit such favorable action.

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Respectfully Submitted,



Stuart D. Frenkel
Reg. No. 29,500
Frenkel & Associates, P.C.
3975 University Drive, Suite 330
Fairfax, VA 22030
Phone: 703-246-9641
Facsimile: 703-246-9646